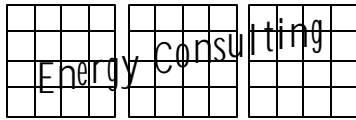


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bill mattinson sarah pernula sean plikuhn

February 3, 2003

To: Bill Pennington

Re: Glazing area in proposed 2005 Residential Standards

Bill;

As I said at the November workshop and again to you last week, I am concerned about possible hardships for the low income housing sector that may result from the proposed change to the allowable residential fenestration area in Section 3.3.2 of the 2005 ACM Manual. This section sets the Standard Design glazing area equal to the Proposed Design area when the proposed glazing is less than 20%.

I'd like to make a brief statement about my concerns at the February 4 Workshop.

Under current and historic practice, glazing choices are recognized as significant energy conservation strategies to be employed by the project designer. Thus when a designer chooses to use less than the maximum glazing area allowed by the prescriptive package in that climate zone, the actual proposed design area is compared to the maximum allowed prescriptive area in the computer compliance analysis. The resulting energy savings for using less glass has effectively been a credit in the proposed energy budget.

Knowledgeable designers have been very aware that increased glazing area results in greater heating and cooling energy use, and especially for budget constrained projects, they have limited the glass area in order to reduce energy consumption. This strategy has allowed them to meet the energy budget without needing additional expensive conservation measures.

CEC staff and contractors contend that some projects, especially multi-family, are being built with bare mandatory minimum conservation measures because they are designed with extremely low fenestration areas. While this may be true, I've observed that the majority of the credit used to eliminate standard energy conserving features in those projects has come from false benefits from the current poorly designed water heating methodology and less so from glazing area reduction.

To get down to specifics, I've been involved in a number of low-income projects both as a consultant for non-profit developers and as a plan checker for PG&E's single and multi-family Energy Star Home programs. I fear for the future of many of these projects if energy conscious fenestration design is taken out of their energy compliance toolkits.

For example, here in Sonoma County the majority of subsidized, self-help affordable housing built in the last 10 years has been through the Burbank Housing Development Corporation, a non-profit that builds both rental apartments and for-sale single family homes. Burbank and other non-profit builders are faced with a constant struggle for funds from the various agencies that support their programs. For the last several years, all Burbank projects have had to show that they were 15% better than current Title 24 to receive extra qualifying points on the scorecards from their funding

agencies. Nick Stewart, Burbank's director has told me that if they don't show up at least 15% better than Title 24 they will just not qualify for funding.

I personally worked with Burbank on several rental apartment projects last year where we stretched to meet the requirement to use 15% less energy than allowed by Title 24. And in every case, we found that the most cost-effective way to achieve that goal was to use the best windows available and to limit their size and number to something less than the allowable prescriptive maximum.

As an example, for Carrillo Place apartments, a 14 building rental project in Santa Rosa, a typical building glazing area was 12.7%; using high performance vinyl lowE windows we were able to achieve an overall project energy budget 16.3% under Title 24 and thus qualify for extra funding points. Today I revised the energy calculations for a typical building by ramping the glass area up to the 16% allowed in climate zone 2; effectively eliminating the credit for window area less than the prescriptive amount just as would occur under the proposed 2005 rules. The result – the savings fell by 2.6%. When carried across the entire project the proposed energy use falls to 13.7% better than Title 24, which would mean no bonus energy credit from the funding agencies and the almost sure elimination of the project for funding consideration.

The Carrillo project and other Burbank projects, use individual gas water heaters so no bogus water heating credit was taken. Their primary energy conservation strategy is based on good windows and good fenestration design of their buildings. To eliminate this as a compliance option, to force them to incorporate other costly measures such as duct inspection, would potentially doom their ability to provide housing for a terribly underserved segment of our population. In addition to rental housing, Burbank develops many self-help single- family homes that would also struggle for funding under the proposed fenestration changes in the Standards.

The Burbank projects and other similar developments are not designed to be absolutely the lowest cost housing that can be built. They are designed to foster community and pride of place and ownership. Typically with 12-14% glass they are attractive and well daylit and comfortable places to live. They are not designed as cheap homes, but rather as affordable homes that are intended to be energy conserving by design not by the addition of devices or equipment to offset excessive fenestration.

If production builders are being offered greater glass area in the 2005 Standards, so be it. But please don't try to offset that extra energy use by removing the option of wise glass use on lower cost homes. It just isn't fair. If you still feel that low glazing area is a loophole to "beat" Title 24, I invite you to come to Sonoma County to see some of these projects. If you still think you need to close that "loophole" I suggest that you set the standard glazing area equal to the proposed only when it shrinks to some extremely low level, say 10% or less. In my opinion, you've already closed the biggest loophole by correcting the water heating methodology.

As always I offer these suggestions as a friend of the CEC.

Truly,

Bill Mattinson
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CABEC